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Protecting Aquatic Life and Human Health from Chemicals and Microbes in Water

From EPA

EPA Completes Research to Inform Development of New Recreational Water Quality Criteria.

Focused on predictive modeling, method development/validation, and epidemiology. Standards will protect people from illnesses associated with fecal contamination.

Go to [Report](#) or water.epa.gov/scitech/swguidance

New Toxicological Review Documents: Chloroprene; Cis-1,2-dichloroethylene; Trans-1,2-dichloroethylene; Pentachlorophenol; 1,1,2,2-Tetrachloroethane; and Hydrogen Cyanide and Cyanide Salts.

Go to [Report](#) or www.epa.gov/IRIS

Hexavalent Chromium and Urea – External Peer-Review Draft IRIS Assessments. EPA/635/R-10/004A; 75 FR 60454; 75 FR 59716 EPA.

Toxicological reviews in Federal Register Notices, for public viewing and comment.

Go to [Report](#) or www.epa.gov/IRIS

Molecular Ecology of Drinking Water. Santo-Domingo, J.W., 2010. Presented at the Water Quality Technology Conference and Exposition (WQTC), Savannah, GA, November 14 - 18, 2010. Examples of molecular research.

Go to [Report](#) or www.epa.gov/nrmrl

Endocrine Disruptor Screening Program.

Procedures for screening chemicals and sample collection; lists 134 high priority chemicals.

Go to www.epa.gov/endo

Eight of Nine U.S. Companies Agree to Work with EPA Regarding Chemicals Used in Natural Gas Extraction.

Studying impact of hydraulic fracturing on drinking water. Halliburton subpoenaed after failing to meet requests for information.

Go to [Article](#) or water.epa.gov/type/groundwater/uic

From Collaborators

Managing One Water: The Clean Water America Alliance’s National Dialogue Report.

Clean Water America Alliance, 2010. Integrating drinking water, wastewater, groundwater, reused water, and stormwater; improving stakeholder relations and regional water sustainability.

Go to [Report](#) or www.cleanwateramericaalliance.org

WaterRF - Hexavalent Chromium in Drinking Water Regulatory Update and Treatment Options.

State of the Science Report. Understanding and addressing removal of hexavalent chromium.

Go to [Report](#) or www.waterrf.org

From the Journals

Perchlorate, Nitrate, and Iodide Intake through Tap Water. Blount, B.C., et al., 2010. *Environmental Science & Technology*, 44(24), 9564-9570.

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Concentration, Chlorination, and Chemical Analysis of Drinking Water for Disinfection Byproduct Mixtures Health Effects Research: U.S. EPA's Four Lab Study. Pressman, J.G., S.D. Richardson, T.F. Speth, R.J. Miltner, M.G. Narotsky, E.S. Hunter, G.E. Rice, L.K. Teuschler, T.A. McDonald, S. Parvez, S.W. Krasner, H.S. Weinberg, A.B. McKague, C.J. Parrett, N. Bodin, R. Chinn, C.T. Lee, and J.E. Simmons, 2010. *Environmental Science & Technology*, 44(19), 7184-7192.

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Functionalization Impacts the Effects of Carbon Nanotubes on the Immune System of Rainbow Trout, *Oncorhynchus mykiss*. Klaper, R., et al., 2010. *Aquatic Toxicology*, 100(2), 211-217.

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What Contribution Do Detergent Fatty Alcohols Make to Sewage Discharges and the Marine Environment? Mudge, S.M., et al., 2010. *Journal of Environmental Monitoring*, 12(10), 1846-1856.

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Impacts of Emerging Organic Contaminants on Freshwater Resources: Review of Recent Occurrences, Sources, Fate and Effects. Pal, A., et al., 2010. *Science of the Total Environment*, 408(24), 6062-6069.

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Arsenic Exposure and Risk of Spontaneous Abortion, Stillbirth, and Infant Mortality. Rahman, A., et al., 2010. *Epidemiology*, 21(6), 797-804.

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An Empirical Model of Perceived Mortality Risks for Selected U.S. Arsenic Hot Spots. Nguyen, T.N., et al., 2010. *Risk Analysis*, 30(10), 1550-1562.

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Association Between Rainfall and Pediatric Emergency Department Visits for Acute Gastrointestinal Illness. Drayna, P., et al., 2010. *Environmental Health Perspectives*, 118(10), 1439-1443.

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Pharmaceuticals, Personal Care Products and Endocrine-Disrupting Chemicals in U.S. Surface and Finished Drinking Waters: A Proposed Ranking System. Kumar, A. and I. Xagorarakis, 2010. *Science of the Total Environment*, 408(23), 5972-5989.

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Assessing the Fate and Transformation By-Product Potential of Trenbolone During Chlorination. Mash, H., 2010. *Chemosphere*, 81(7), 946-953.

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Estrogenic Activity of US Drinking Waters: A Relative Exposure Comparison. Stanford, B.D., et al., 2010. *Journal of the American Water Works Association*, 102(11).

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Childhood Exposure to Phthalates: Associations with Thyroid Function, Insulin-like Growth Factor I, and Growth. Boas, M., et al., 2010. *Environmental Health Perspectives*, 118(10), 1458-1464.

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Endocrine Profiling and Prioritization of Environmental Chemicals Using ToxCast Data. Reif, D., et al., 2010. *Environmental Health Perspectives*, 118(12), 1714-1720.

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Role of Detection Limits in Drinking Water Regulation. Calder, R.S.D. and K.A. Schmitt, 2010. *Environmental Science & Technology*, 44(21), 8008-8014.

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Maternal Low-Level Lead Exposure and Fetal Growth. Zhu, M., et al., 2010. *Environmental Health Perspectives*, 118(10), 1471-1475.

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The Risk of West Nile Virus Infection Is Associated with Combined Sewer Overflow Streams in Urban Atlanta, Georgia, USA. Vazquez-Prokopec, G.M., et al., 2010. *Environmental Health Perspectives*, 118(10), 1382-1388.

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Anthropogenic Tracers, Endocrine Disrupting Chemicals, and Endocrine Disruption in Minnesota Lakes. Writer, J.H., et al., 2010. *Science of the Total Environment*, 409(1), 100-111.

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Disinfection By-Products and Bladder Cancer: Common Genetic Variants May Confer Increased Risk. Freeman, K.S., 2010. *Environmental Health Perspectives*, 118(11), a491.

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Effects of Prenatal Exposure to a Low Dose Atrazine Metabolite Mixture on Pubertal Timing and Prostate Development of Male Long-Evans Rats. Stanko, J.P., et al., 2010. *Reproductive Toxicology*, 30(4), 540-549.

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Endocrine Modulation, Inhibition of Ovarian Development and Hepatic Alterations in Rainbow Trout Exposed to Polluted River Water. Vigano, L., et al., 2010. *Environmental Pollution*, 158(12), 3675-3683.

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Effects of Silver Nanoparticles on the Development and Histopathology Biomarkers of Japanese Medaka (*Oryzias latipes*) Using the Partial-Life Test. Wu, Y., et al., 2010. *Aquatic Toxicology*, 100(2), 160-167.

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Occurrence of Pesticides in Water, Sediments, and Fish Tissues in a Lake Surrounded by Agricultural Lands: Concerning Risks to Humans and Ecological Receptors. Abrantes, N., et al., 2010. *Water, Air, and Soil Pollution*, 212(1-4), 77-88.

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Effects of Coalbed Natural Gas Development on Fish Assemblages in Tributary Streams of the Powder and Tongue Rivers. Davis, W.N., et al., 2010. *Freshwater Biology*, 55(12), 2612-2625.

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Bromate Reduction in Simulated Gastric Juice. Cotruvo, J.A., et al., 2010. *Journal of the American Water Works Association*, 102(11).

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Production of Phthalate Esters by Nuisance Freshwater Algae and Cyanobacteria. Babu, B. and J.T. Wu, 2010. *Science of the Total Environment*, 408(21), 4969-4975.

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Atrazine Binds to the Growth Hormone-Releasing Hormone Receptor and Affects Growth Hormone Gene Expression. Fakhouri, W.D., et al., 2010. *Environmental Health Perspectives*, 118(10), 1400-1405.

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The Future Use of *In Vitro* Data in Risk Assessment to Set Human Exposure Standards: Challenging Problems and Familiar Solutions. Crump, K.S., et al., 2010. *Environmental Health Perspectives*, 118(10), 1350-1354.

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Intellectual Function in Mexican Children Living in a Mining Area and Environmentally Exposed to Manganese. Riojas-Rodríguez, H., et al., 2010. *Environmental Health Perspectives*, 118(10), 1465-1470.

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Chronic Copper Toxicity in the Estuarine Copepod *Acartia tonsa* at Different Salinities. Lauer, M.M. and A. Bianchini, 2010. *Environmental Toxicology and Chemistry*, 29(10), 2297-2303.

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Oxidative Stress and Toxicity of Gold Nanoparticles in *Mytilus edulis*. Tedesco, S., et al., 2010. *Aquatic Toxicology*, 100(2), 178-186.

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Domoic Acid Uptake and Elimination Kinetics in Oysters and Mussels in Relation to Body Size and Anatomical Distribution of Toxin. Mafra, L.L., Jr., et al., 2010. *Aquatic Toxicology*, 100(1), 17-29.

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Environmental Risk Assessment of Three Selective Serotonin Reuptake Inhibitors in the Aquatic Environment: A Case Study Including a Cocktail Scenario. Styryshave, B., et al., 2010. *Environmental Toxicology and Chemistry*, 30(1), 254-261.

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Reproductive Success of Eastern Mosquitofish (*Gambusia affinis*) Exposed to Pulp and Paper Dominated Receiving Streams and Effects of Masculinization Responses. Noggle, J.J., et al., 2010. *Water Quality Research Journal of Canada*, 45(2), 153-161.

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Monitoring Acute and Chronic Water Column Toxicity in the Northern Sacramento–San Joaquin Estuary, California, USA, Using the Euryhaline Amphipod, *Hyalella azteca*: 2006 to 2007. Werner, I., et al., 2010. *Environmental Toxicology and Chemistry*, 29(10), 2190-2199.

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Toxicity to *Melita plumulosa* from Intermittent and Continuous Exposures to Dissolved Copper. Angel, B.M., et al., 2010. *Environmental Toxicology and Chemistry*, 29(12), 2823-2830.

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The Effect of Natural Dissolved Organic Carbon on the Acute Toxicity of Copper to Larval Freshwater Mussels (Glochidia). Gillis, P.L., et al., 2010. *Environmental Toxicology and Chemistry*, 29(11), 2519-2528.

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Trophic Structure and Mercury Distribution in a Gulf of St. Lawrence (Canada) Food Web Using Stable Isotope Analysis. Lavoie, R.A., et al., 2010. *Science of the Total Environment*, 408(22), 5529-5539.

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Validating a Multi-Biomarker Approach with the Shanny *Lipophrys pholis* to Monitor Oil Spills in European Marine Ecosystems. Santos, M.M., et al., 2010. *Chemosphere*, 81(6), 685-691.

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Upcoming Meetings

3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. August 23-26, 2011 in Copenhagen, Denmark.

Go to www.emcon2011.com

AWWA's 130th Annual Conference & Exposition (ACE11). June 12-16, 2011 in Washington, D.C.

Go to www.awwa.org/ACE11

SETAC North America 32nd Annual Meeting. November 13-17, 2011 in Boston, MA.

Go to boston.setac.org

2011 Stakeholder Meeting on EPA's Development of New or Revised Recreational Water Quality Criteria. June 14-15, 2011 in New Orleans, LA.

Go to [Meeting Page](#) or water.epa.gov/scitech

IWA Specialty Conference on Natural Organic Matter: From Source to Tap and Beyond. July 27-29, 2011 in Costa Mesa, CA.

Go to www.regonline.com/NOM2011

Water Research Foundation Knowledge Webcast: Opportunities and Challenges of Nanomaterials for the Drinking Water Community. Tuccillo, M.E., and G.R. Boyd, 2011. Online April 26, 2011.

Go to www.awwarf.com

Innovative and Affordable Tools and Technologies for Sustainable Public Health Protection

From EPA

Report on Condition Assessment Technology of Wastewater Collection Systems. Tuccillo, M.E., et al., 2010. EPA/600/R-10/101. Emerging and innovative technologies for sewer inspection.

Go to [Report](#) or www.epa.gov/nrmrl

Control and Mitigation of Drinking Water Losses in Distribution Systems. 2010. EPA/816/R/10/019. Tools and techniques to help public water systems prevent water loss and maintain infrastructure.

Go to [Report](#) or water.epa.gov/type/drink/pws

Test/QA Plan for Verification of Coliform Detection Technologies for Drinking Water. Verified the performance and tested the ease of use of the Automated Microbiology Platform, a bench-top analyzer of *E. coli* and total coliforms.

Go to [Report](#) or www.epa.gov/nrmrl

State of Technology for Rehabilitation of Wastewater Collection Systems. Sterling, R., et al., 2010. EPA/600/R-10/078. Technologies for sewer mainlines, laterals, manholes, and other appurtenances. Emphasis on trenchless technologies.

Go to [Report](#) or www.epa.gov/nrmrl

Innovative Internal Camera Inspection and Data Management for Effective Condition Assessment of Collection Systems. Martel, K., et al., 2010. EPA/600/R-10/082.

Go to [Report](#) or www.epa.gov/nrmrl

Arsenic Removal from Drinking Water by Coagulation/Filtration: U.S. EPA Demonstration Project at the City of Okanogan, WA Final Performance Evaluation Report. Chen, A.S.C., et al., 2010. EPA/600/R-10/166.

Go to [Report](#) or www.epa.gov/nrmrl

Adsorptive Media for Removal of Uranium in Drinking Water Verified. ETV verified the performance of Brimac HA 216 Adsorptive Media for uranium removal from well water.

Go to [Report](#) or www.epa.gov/nrmrl

All Hazards Risk Assessment and Consequence Analysis Tools for Drinking Water and Wastewater Utilities. Vulnerability Self Assessment Tool (VSAT) and Water Health and Economic Analysis Tool (WHEAT) software.

Go to [Report](#) or water.epa.gov/infrastructure

Nanomaterial Case Studies: Nanoscale Titanium Dioxide in Water Treatment and in Topical Sunscreen. 2010. EPA/600/R-09/057F. For developing research priorities to assess ecological and health implications.

Go to [Report](#) or www.epa.gov/ncea

Test/QA Plan for Verification of Microcystin Test Kits. McKernan, J., et al., 2010. EPA/600/R-10/102. Evaluation of microcystin test kits for analysis of three microcystin variants in deionized (DI) water and natural water (RW).

Go to [Report](#) or www.epa.gov/etv

Evaluation of Energy Conservation Measures for Wastewater Treatment Facilities. 2010. EPA 832/R/10/005. Technical and cost data gathered from literature, manufacturers, and facilities. Innovative and emerging technologies included.

Go to [Report](#) or water.epa.gov/scitech/wastetech

Test/QA Plan for Verification of Isotopic Carbon Dioxide Analyzers for Carbon Sequestration Monitoring. Tested isotopic CO₂ analyzers focusing on GCS monitoring applications and sequestration from a coal-fired power plant.

Go to [Report](#) or www.epa.gov/etv

Test/QA Plan for Verification of Nitrate Sensors for Groundwater Remediation Monitoring.

McKernan, J., et al., 2010. EPA/600/R-10/104. Testing submersible sensors with ion-selective electrodes.

Go to [Report](#) or www.epa.gov/etv

EPA Proposes to Cut Mercury Emissions from Sewage Sludge Incinerators. Would apply to hearth and fluidized bed incinerators and would cut mercury emissions from these by more than 75 percent.

Go to [Article](#) or www.epa.gov/air

From Collaborators

Direct Potable Reuse Workshop Report is Now Available. Information gaps and existing barriers to direct potable reuse as a feasible water resource option in California.

Go to [Report](#) or www.nwri-usa.org

Impact of Silver Nanoparticles on Wastewater Treatment. 2010. WERF Report U3R07. Evaluates impact on activated sludge treatment and on anaerobic sludge digestion.

Go to [Article](#) or www.werf.org

Tiny Protozoa May Hold Key to World Water Safety. Woods Hole Oceanographic Institute, 2010. *Science Daily*. Swimming Behavioral Spectrophotometer (SBS) employs one-celled protozoa to detect toxins in water sources.

Go to [Article](#) or www.whoi.edu

WERF - Biological Nutrient Removal and Greenhouse Gases Compendium. Information on greenhouse gas emissions from wastewater treatment. WWTFs typically fall below the 25,000 mT CO₂e/year EPA emissions reporting threshold.

Go to [Report](#) or www.werf.org

NRDC & UCSB - A Clear Blue Future: How Greening California Cities Can Address Water Resources and Climate Challenges in the 21st Century. Natural Resources Defense Council and University of California, Santa Barbara.

Go to [Report](#) or www.nrdc.org/water/lid

Arsenic Removal with Iron-Tailored Activated Carbon Plus Zero-Valent Iron. Chem, W., et al., 2010. Devise and test innovative arsenic removal system that employs corroding iron plus iron-tailored GAC.

Go to [Report](#) or www.waterrf.org

Optimizing Biotreatment: Integrated Process Models and Control Strategies. 2010. WERF Report 03-CTS-11. Literature review and developing real-time, dynamic models for biological nutrient removal.

Go to [Article](#) or www.waterrf.org

Water Systems + Smart Grid = Launching a ‘Win-Win’? Balancing demands with supply of electricity, smart grid technology allows regional power systems run more smoothly and save water utilities money.

Go to [Article](#) or www.awwa.org

DOE Announces Winners of 2010 Federal Energy and Water Management Awards. Award for outstanding and innovative efforts to improve energy, water, and vehicle fleet sustainability and efficiency.

Go to [Article](#) or www.energy.gov

MOU Signed at EPA Headquarters to Support Research on Water Efficient Plumbing. Research on impact of reduced water flows in sanitary drainage systems from reductions in water use.

Go to [Article](#) or www.a4we.org

WERF Opens BMP SELECT Tool to the Public. 2010. Planning tool for examining effectiveness of stormwater pollution controls and whole-life costs.

Go to [Article](#) or www.werf.org

2011 GWPC Underground Injection Control Conference: The National Ground Water Protection Program (Presentations). Ground Water Protection Council. January 24-26, 2011.

Go to [Report](#) or www.gwpc.org

Online Newsletter: The National Water Monitoring News. Fall 2010. Updates on the Gulf Oil Spill response, workgroups, conference highlights, and more.

Go to [Article](#) or acwi.gov/monitoring/newsletter

New Orleans' Plans to Restore Wetlands Using Effluent Have 'Wow' Factors. Multi-disciplinary project using a new technology to scrub emerging pollutants from effluent.

Go to [Article](#) or www.awwa.org

From the Journals

Costs of Arsenic Treatment for Potable Water in California and Comparison to U.S. Environmental Protection Agency Affordability Metrics. Hilkert Colby, E.J., et al., 2010. *Journal of the American Water Resources Association*, 46(6), 1238-1254.

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Review of Sensor Placement Strategies for Contamination Warning Systems in Drinking Water Distribution Systems. Hart, W.E. and R. Murray, 2010. *Journal of Water Resources Planning and Management*, 136(6), 611-619.

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High Performance RO Membranes for Desalination and Wastewater Reclamation and Their Operation Results. Henmi, M., et al., 2010. *Water Practice & Technology*, 62(9), 2134-40.

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Formation of Hazardous Inorganic By-Products During Electrolysis of Seawater as a Disinfection Process for Desalination. Oh, B.S., et al., 2010. *Science of the Total Environment*, 408(23), 5958-5965.

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Lead-Contaminated Water from Brass Plumbing Devices in New Buildings. Elfland, C., et al., 2010. *Journal of the American Water Works Association*, 102(11), 66-76.

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Lead Removal from Tap Water Using POU Devices. Deshommes, E., et al., 2010. *Journal of the American Water Works Association*, 102(11).

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What Are the Most Effective Treatment Methods for Removing EDCs and PPCPs? Snyder, S.A., et al., 2010. *Opflow Online*, 36(10).

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Fate Simulation and Risk Assessment of Endocrine Disrupting Chemicals in a Reservoir Receiving Recycled Wastewater. Cao, Q., et al., 2010. *Science of the Total Environment*, 408(24), 6243-6250.

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Electrospray Ionization Mass Spectrometry Characterization of Interactions of Newly Identified Water Disinfection Byproducts Halobenzoquinones with Oligodeoxynucleotides. Anichina, J., et al., 2010. *Environmental Science & Technology*, 44(24), 9557-9563.

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Speciation and Distribution of Vanadium in Drinking Water Iron Pipe Corrosion By-Products. Gerke, T.L., K.G. Scheckel, and J.B. Maynard, 2010. *Science of the Total Environment*, 408(23), 5845-5853.

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Efficacy of 'Saltwater Flushing' in Protecting the Great Lakes from Biological Invasions by Invertebrate Eggs in Ships' Ballast Sediment. Briski, E., et al., 2010. *Freshwater Biology*, 55(11), 2414-2424.

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Is Strategic Asset Management Applicable to Small and Medium Utilities? Alegre, H., 2010. *Water Science and Technology*, 62(9), 2051-2058.

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SLOTS: Effective Algorithm for Sensor Placement in Water Distribution Systems. Dorini, G., et al., 2010. *Journal of Water Resources Planning and Management*, 136(6), 620-628.

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Assessing the Carbon Footprint of Water Supply and Distribution Systems. Boulos, P., and C. Bros, 2010. *Journal of the American Water Works Association*, 102(11).

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Potential Impacts of Leakage from Deep CO₂ Geosequestration on Overlying Freshwater Aquifers. Little, M.G. and R.B. Jackson, 2010. *Environmental Science & Technology*, 44(23), 9225-9232.

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1995–2009: What Have We Learned About Effluent Biotreatment in Relation to Environmental Protection? Kovacs, T., et al., 2010. *Water Quality Research Journal of Canada*, 45(2), 251-262.

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Chlorine Disinfection of Blended Municipal Wastewater Effluents. Boczek, L.A., C.H. Johnson, and M.C. Meckes, 2010. *Water Environment Research*, 82(12), 2373-2379.

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Field Demonstration of Innovative Leak Detection/Location in Conjunction with Pipe Wall Thickness Testing for Water Mains. Wang, L., et al., 2010. *ASCE Pipelines 2010 Conference Proceeding Paper*, 1188-1198.

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Removal and Accumulation of Cu, Ni and Zn in Horizontal Subsurface Flow Constructed Wetlands: Contribution of Vegetation and Filling Medium. Galletti, A., et al., 2010. *Science of the Total Environment*, 408(21), 5097-5105.

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Determination of Biocides and Pesticides by On-Line Solid Phase Extraction Coupled with Mass Spectrometry and Their Behaviour in Wastewater and Surface Water. Singer, H., et al., 2010. *Environmental Pollution*, 158(10), 3054-3064.

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Low-Impact Development Design--Integrating Suitability Analysis and Site Planning for Reduction of Post-Development Stormwater Quantity. Wang, X., et al., 2010. *Sustainability*, 2(8), 2467-2482.

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Development of a New Toxic-Unit Model for the Bioassessment of Metals in Streams. Schmidt, T.S., et al., 2010. *Environmental Toxicology and Chemistry*, 29(11), 2432-2442.

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Preparation of Iron-Impregnated Granular Activated Carbon for Arsenic Removal from Drinking Water. Chang, Q., et al., 2010. *Journal of Hazardous Materials*, 184(1-3), 515-522.

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Oil-B-Gone. Colic, M. and Z. Yunhua, 2010. *Industrial Wastewater*, 9(6). New treatment train for iron and steel industry produces water suitable for reuse.

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A Modified Culture-Based Study of Bacterial Community Composition in a Tannery Wastewater Treatment Plant. Desta, A.F., et al., 2010. *Water Science and Technology*, 62(11), 2543-2549.

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Upcoming Meetings

15th Annual Water Reuse & Desalination Research Conference. May 16-17, 2011 in Las Vegas, NV.

Go to [Meeting Page](#) or watereuse.org/foundation

Groundwater: Cities, Suburbs, and Growth Areas – Remediating the Past/Managing for the Future. August 8-9, 2011 in Los Angeles, CA.

Go to [Meeting Page](#) or www.ngwa.org

Collection Systems 2011: Rehab or Roulette: Is our Environment at Risk? June 12-15, 2011 in Raleigh, NC.

Go to www.wef.org/collectionsystems

Salinity and Desalination in the Southwest: Challenges and Solutions. April 26-27, 2011 in Yuma, AZ.

Go to [Meeting Page](#) or ag.arizona.edu/azwater

Ecological Systems Approach to Protect and Restore Sustainable Water Quality and Water Quantity on a Watershed Basis

From EPA

National Water Program Climate Change Strategy: Key Action Update for 2010-2011. August 2010. EPA 800/R/10/002.

Go to [Report](#) or water.epa.gov/scitech/climatechange

EPA Releases Reports on Dioxin Emitted During Deepwater Horizon BP Spill. Levels of dioxins created during controlled burns were below levels of concern.

Go to www.epa.gov/research/dioxin

Assessing Water and Carbon Footprints for Green Water Resource Management. Yang, Y.J., P. Biswas, T. Keener, J. Lee, S. Liang, and N. Chang, 2010. Presented at Water & Energy in Changing Climates Symposium, Pittsburgh, PA, September 26-29, 2010.

Go to [Report](#) or www.gwpc.org

Lake Michigan Mass Balance Study: Successes, Lessons Learned, and Challenges. Kreis, R.G. Jr., K.R. Rygwelski, S. Beck, G. Warren, and P. Horvatin, 2010. Presented at Lake Michigan Community Modeling and Forecasting Workshop, Ann Arbor, MI, December 9-10, 2010.

Kreis, R., LLRFR, kreis.russell@epa.gov, 734-692-7615

Gauging the Health of New England's Lakes and Ponds. EPA teamed with New England Interstate Water Pollution Control Commission and others on probabilistic sampling approach that allows for statistically valid statements about a population of lakes across a state, region, or the country.

Go to [Report](#) or www.neiwpc.org/waterquality

Little Streams, Big Impact: EPA Researchers Have Been Traversing Oregon to Develop a Small Stream Classification System That Will Help States Protect Waterbodies far Downstream.

Go to [Article](#) or www.epa.gov/wed

From Collaborators

Relations That Affect the Probability and Prediction of Nitrate Concentration in Private Wells in the Glacial Aquifer System in the United States. National Water-Quality Assessment Program. Warner, K.L., and T.L. Arnold, 2010.

Go to [Article](#) or water.usgs.gov/nawqa

Water Availability and Use Pilot: A Multiscale Assessment in the U.S. Great Lakes Basin. Reeves, H.A., 2010.

Go to [Article](#) or water.usgs.gov

Relative Costs of New Water Supply Options for Front Range Cities. Conservation is Least Costly New Water Supply in Colorado.

Go to [Report](#) or www.waterpolicy.info

Linking Receiving Water Impacts to Sources and to Water Quality Management Decisions: Using Nutrients as an Initial Case Study. 2010. WERF Report 3C10.

Go to [Article](#) or www.werf.org

USACE - Environmental Habitat Conditions Associated with Freshwater Dreissenids. Farr, M.D. and B.S. Payne, 2010. ERDC/EL TR-10-21. Summarizes the physical and environmental characteristics associated with zebra (*Dreissena polymorpha*) and quagga (*D. bugensis*) mussels.

Go to [Report](#) or el.erc.usace.army.mil

An Ocean Infrastructure Strategy for U.S. Ocean Research in 2030. NRC expert committee to advise on ocean infrastructure that will facilitate research.

Go to [Report](#) or www.nationalacademies.org

Review to Assess the Federal Response to Health Effects Associated with the Gulf of Mexico Oil Spill.

Go to [Report](#) or www.nationalacademies.org

Water Research Quarterly

2011 AWWA Conservation and Water Resources Symposia (Presentations). March 14-16, 2011 in Orlando, FL.

Go to acumen-va-online.com/awwaSS2011

Workshop on Healthy Watershed Integrated Assessments Proceedings. November 2-4, 2010 in Estes Park, CO. Naomi Detenbeck, ORD/NHEERL/AED, detenbeck.naomi@epa.gov; or Laura Gabanski, OW/AWPD, gabanski.laura@epa.gov.

Go to [Report](#) or water.epa.gov/polwaste/nps/watershed

Groundwater Threat to Rivers Worse than Suspected. Land-use practices significantly reduce groundwater recharge into rivers and streams.

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Climate Change, Water, and Risk – Current Water Demands Are Not Sustainable. Examined effects of global warming on U.S. water supply and demand. One-third of all counties in the lower 48 face higher risks of water shortages by mid-century.

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2012 Sustainable Water Management Conference. March 18-21, 2012 in Portland, OR.

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Integrated Water Resources Management: The Emperor's New Clothes or Indispensable Process? 2011 AWRA Summer Specialty Conference. June 27-29, 2011 in Snowbird, UT.

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Climate Information for Managing Risks Symposium: Local to Regional Adaptation and Mitigation Strategies. May 24-27, 2011 in Orlando, FL.

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